DOCUMENT RESUME

ED 472 864 IR 058 570

AUTHOR	Rafste, Elisabeth Tallaksen
TITLE	From Bud to Blossom--How to Become an Information-Literate Person and Learn a Subject/Topic.
PUB DATE	2002-08-00
NOTE	7p.; In: Libraries for Life: Democracy, Diversity, Delivery. IFLA Council and General Conference: Conference Programme and Proceedings (68th, Glasgow, Scotland, August 18-24, 2002); see IR 058 549.
AVAILABLE FROM	For full text: http://www.ifla.org.
PUB TYPE	Information Analyses (070) -- Speeches/Meeting Papers (150)
EDRS PRICE	EDRS Price MF01/PC01 Plus Postage.
DESCRIPTORS	Elementary Secondary Education; *Information Literacy; Information Seeking; *Information Skills; Librarian Teacher Cooperation; Library Instruction; Research Skills; School Libraries; *Skill Development; Student Research

ABSTRACT

The process from information to knowledge is discussed as part of the learning process students must go through to achieve a successful and effective outcome of the process. In a school situation models for the information-seeking process are too general, rational and linear to give indications for practice. Four didactic dilemmas are discussed in this paper to present more aspects of the process. The importance of professional instruction and guidance is stressed as is the cooperation of teachers and school librarians to make the students succeed in transforming information into knowledge in a meaningful way. (Contains nine references.) (Author)

Reproductions supplied by EDRS are the best that can be made
from the original document.

IFLA GLASGOW 2002

68th IFLA Council and General Conference August 18-24, 2002

PERMISSION TO REPRODUCE AND DISSEMINATE THIS MATERIAL HAS BEEN GRANTED BY

S. Koopman

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

1

ED 472 864

Code Number: 027-097-E
Division Number: III
Professional Group: School Libraries
Joint Meeting with: -
Meeting Number: 97
Simultaneous Interpretation: Yes

From bud to blossom - How to become an information - literate person *and* learn a subject/topic

Elisabeth Tallaksen Rafste
Agder University College
Arendal, Norway

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Abstract:

Education shall not only transmit learning; it shall also provide learners with the ability to acquire and attain new knowledge themselves

(Core curriculum for primary, secondary and adult education in Norway 1993:15)

The process from information to knowledge is discussed as part of the learning process students must go through to achieve a successful and effective outcome of the process. In a school situation models for the information-seeking process are too general, rational and linear to give indications for practice. Four didactic dilemmas are discussed to present more aspects of the process. The importance of professional instruction and guidance is stressed as is the cooperation of teachers and school librarians to make the students succeed in transforming information into knowledge in a meaningful way.

Introduction

The aim of this paper is to discuss the process from information to knowledge in educational settings, involving school librarians and teachers, school libraries and classrooms. The fundamental focus for discussion is built upon pedagogical theory and research as well as on theory and research in library and information science. The claim is that moving from information to knowledge must be a contextualized process, *not* a process per se. It must be a question of students' learning of learning strategies as well as

IR058570

BEST COPY AVAILABLE

learning more about a topic or subject. This is a complicated learning process in which the students are active in acquiring new knowledge. It constitutes a didactic challenge in modern education.

My point of departure for discussing the process from information to knowledge is Pitts' and Stripling's model of the information-seeking process - another name for the process from information to knowledge. In the first part of the paper I discuss the model in relation to four didactic dilemmas or challenges. These are challenges the instructor or tutor needs to take into consideration when training and guiding the students. The students also ought to know about the process as well as the challenges. In part two I go deeper into what I call *'the big leap'*, the transforming of information into knowledge; a two-sided learning process with a double learning aim, learning strategies and learning subjects. What training and guiding do the students need to make this leap? The last part of the paper focuses on the roles of the school librarian and the teachers during student - active work.

The information-seeking process - point of departure for the discussion

There are many models of the information-seeking process. The model Pitts and Stripling (1988) have developed consists of ten steps, and gives a good differentiation of the process:

Step 1 Choose a broad topic
Step 2 Get an overview og the topic
Step 3 Narrow the topic
Step 4 Develop a thesis or statement of purpose
Step 5 Formulate questions to guide research
Step 6 Plan for research and production
Step 7: Find/analyze/evaluate sources
Step 8: Evaluate evidence/take notes/compile bibliography
Step 9 Establish conclusions/Organize information into an outline
Step 10 Create and present final product

The model is, as most others, a rational, efficient and intellectual description of students' working process on a project. It describes the process as universal - this is the path for everyone - and as linear - through step one to ten. This is theory. What about practice? How do the 30 students in our class manage to go through the process from information to knowledge? What challenges do they face and what should they know about the process? What do the instructors or tutors have to keep in mind when guiding the students through the process? These questions will be approached through four dilemmas. Each dilemma is presented as an extreme on a continuum:

Is the information-seeking process
Dilemma 1 a cognitive process←-------or----------→a cognitive, affective, social process?
Dilemma 2 a linear process ←--------or---------→ a non-linear process?
Dilemma 3 a general process ←--------or----------→ an individual process?
Dilemma 4 a process per se ←-------or----------→ a process integrated in school subjects?

Dilemma 1 The information-seeking-process:
a cognitive process←------or---------→a cognitive, affective, social process?

The ten steps of Stripling and Pitts' model appear as a unit, a meaningful process where the students go through a rational, cognitive process. But the process is often influenced by more than intellectual thoughts and acts. Carol Kuhlthau (1993) has, in her research on students in senior high school, found how their feelings affect their thoughts and activity during the seeking process. They were anxious they would no manage the task given. They were anxious about how to narrow the topic and obtain a focus.

Considering Kuhlthau's findings - and certainly Pitts (1994) has done so in her research - will be important for the instructors. It will influence the way they communicate with the students. The students in Kuhlthau's research work had little formal support from teachers or school librarians through the first five steps of the model. Some students even thought it was cheating to ask an instructor for help.
The confusion and anxiety were most difficult to handle through the first five steps until they had worked out a focus for their project. They were struggling more on the right side of the continuum above than on the left. What about the students that did not manage to work out a focus? Kuhlthau found that some of them gave in, while others went on without a focus, ending up in copying texts they had a vague feeling were relevant.

In the research work of Chang-Wells and Wells (1993) on young students in primary school doing project work, they stress the importance of introducing the students to a common set of concepts on the topic in question. This was a way to make sure they understood what was meant by what was said in discussions and in texts. It provided a platform for them all to advance from. The instructor also played an important part in guiding the students through the first five steps in the model, asking questions that not only supported but also challenged their thinking. Young students obviously need more instruction than older students to go from information to knowledge. On the other hand Kuhlthau's findings indicate that older students, depending how often they have been through the process, also need careful instruction. The value of having a common set of concepts on a topic, and that includes a plenum motivation through introduction of the topic, might reduce the anxiousness of the students. The introduction might be in the school library as well as in the classroom. I suggest this step to be the first in an information-seeking process.

The information-seeking process also encompasses social aspects. How does the communication between student and instructor and/or students influence the process? How does good communication enhance the process and bad interfere? We do not know enough about this. Limberg (1998) observed in her research work on Swedish students in senior high school how time - consuming and frustrating bad communication in the study groups was for their progress. In my own research work on students' use of the school library in senior high school in Norway (Rafste 2001), I was told by teachers as well as school librarians and students about the social side of the work process. Project work *was* most often groupwork, and the communication in the group varied. But what usually happened was that the students took on *one* issue of the topic each, and dropped the discussion in the group, or what was worst: one group member took on the responsibility of the whole group and worked from information to knowledge on her own. This way of learning would not have happened if there had been active instruction through the process. To neglect the importance of social interaction in the information-seeking process is to neglect the positive learning effect of many 'voices' to challenge our own understanding and points of view.

Dilemma 2 The information-seeking-process:
a linear process ***←--------or----------→ a non-linear process***

The model describes the information-seeking process as linear. In practice it is non-linear
All 'model makers', including the one in question, will agree on this (cf. Eisenberg and Berkowitz 1988, Kuhlthau 1993). It is like struggling back and forth on the continuum above. Sometimes the path takes on a smoothness - the students walk on the left side of the continuum. They see more clearly what to focus on, what information will be relevant, how to compare different views on a matter, etc. At other times the path seems barricaded by tangles of dim and diffuse thoughts, by loads of information, by difficulties in understanding texts, etc. There is a need to reverse, not to advance. The student stumbles on the right side of the continuum. But do the students know this back - and - forth process as a natural way of rambling to acquire and attain new knowledge? A way through shrubs and clearings? The students in Kuhlthau's study and also those in my own study seem to be ignorant of it - or ignore it. The need for an instructor is also obvious here - the need for a 'walking stick'.

Dilemma 3 The information-seeking process:
a general process ←------or----------→ an individual process

The model gives the impression of the information-seeking process being general, the same for everyone. It is not. L. Limberg (1998) found that the students went through the process in different ways. What made the difference depended on what in the process the students found important and how they used the texts they had selected as relevant. The different understandings of information search and use have to do with a 'feeling', Limberg says, of the texts when it comes to analyzing, interpreting and critical thinking. It is not so much a question of searching and absorbing information as a question of understanding the content of the information. To do so is a demanding intellectual activity. The indivdual way of working through the process also influences the result of learning, according to Limberg. She relates her findings to two different attitudes to the information-seeking process: an *atomistic* and a *holistic*. The atomistic attitude leads to a process where search and use constitute a piling up of facts. She asks whether this attitude to information-search and use might have something to do with their previous experience in using the school library. In my opinion this is part of the answer: it has to do with the ways the students have been trained in using the school library, but I think it has even more to do with the school's belief in the textbook and knowledge as 'given'. The holistic process is characterized by search and use as an analysis of different views of an issue, and a discussion of these views. Limberg's findings support the assumption that students have different attitudes and understandings of information and the process of processing relevant information into their own, new knowledge.

The Swedish researcher R. Säljö (2001) emphazises the importance for the school to make all students understand what ways of working on a topic are expected of them. What is obvious for teachers and school librarians is not so for students without experience of acquiring and attaining new knowledge themselves. His point of view is important when we are concerned with the information-seeking process, and is in line with Limberg's findings. The students have to understand thoroughly what this education aims at in student-active and exploring learning processes. To provide them with these abilities, good instruction and guidance are needed, not general instruction, but instruction adapted to the individual through communication. These angles lead to the last didactic challenge:

Dilemma 4 The information-seeking process
a process per se ←------or----------→ a process integrated in school subjects

Is the process from information to knowledge - from bud to blossom - a general ability the students can learn decontextualized from their school subjects - a process often called *'learning to learn'* ? Is it a process that can be transferred to all later projects or exploring tasks, or does it have to be contextualized to have a goal-directed learning effect? Research (cf. Säljö, Limberg, Kuhlthau) indicates that contextualizing is needed. The process must be embedded in the topic the students are going to attain new knowledge in. What is practice like? My own research work (Rafste 2001) demonstrates that everywhere there is a severe lack of training and instruction in the information-seeking process in the first place. The students get an introduction to the school library of one or two hours at the beginning of their first year of senior high school. No more. It is a decontextualized introduction to where to find the different material and texts and how to search for these in the catalogue. There was little or no tradition to involve the school library before or during student-active and exploring tasks. The students were more outside the above continuum than on it. When on it, they were on the left side of the continuum. Walking towards the right side was not a question of discussion - it was a blank spot. To make a move towards the right side of the continuum presupposes cooperation between the school librarian and the teachers. In the last part of this paper I will discuss this. Before that the big leap from transforming information to knowledge will be discussed. In my opinion this is the most challenging stage of the process.

BEST COPY AVAILABLE

The big leap: transforming information into knowledge - chaos or learning?

The information- rich society presupposes the ability to read in many ways, not only as a student who consumes, but as a student who has the ability to produce in creative ways on the basis of what she or he has read. For all students managing the process from information to knowledge is something dramatically new, Säljö (2001) claims. New - and difficult. This is exactly what L. Limberg's (1998) research work indicate. She demonstrates how the students' different ways of understanding their task/project influenced *what* information they gathered, *how* they evaluated it and *how* they transformed the information into new knowledge. The research also demonstrates that the way of understanding the project was related to the learning effect of the project.

A pressing question coming out of this research is how instructors can help the students, not only to pile up facts and present these as their product or new knowledge, but to help them to transform relevant information into new knowledge that gives new insight into the topic. One way of looking into this is to have a wide variation of sources to meet the different students' level in a class. Further actions to take are to train the students' ability to make overviews of texts and to structure and grasp conceptual knowledge (Säljö 2001). Summarizing text, that is, grasping the main contents of the text and evaluating the text critically, will likewise be of importance. It must be embedded all the way in goal-directed and meaningful actions. But there is not only *one* general way of doing this. Säljö writes that methods of structuring and evaluation will depend on the subject, the activity and the context of the project. He stresses that this makes it important for the students to be instructed by a professional to attain these abilities. The professional will be the school librarian for some steps in the information-seeking process, the subject teacher for others steps.

Another angle of incidence to facilitate the 'big leap' - the transformation from information to knowledge - is guiding the students in metacognitve strategies. Metacognition is knowledge of and control of the students' own cognitive system. The professional instructor leads the students to see and understands how the professional understand the topic, what skills are needed to do the job and what strategies are needed to work effectively and in a goal oriented manner. By doing this the students as novices are given an opportunity to understand the expert's way of reasoning and acting.

Coaching and cooperation - parallell or complementary roles?

We have discussed four didactic challenges that come out of Stripling and Pitts' model of the information-seeking process. We have called attention to the challenges this way of teaching gives teachers and school librarians. In the last part of this paper we shall discuss what roles school librarians and teachers will have as instructors and guides in the process. In what ways are the roles related to each other? In what ways are they complementary?

In my research work (Rafste 2001) I was suprised to find little or no cooperation between the two professions. Teacher and student cooperated well - but the school library was never involved. School librarian and student cooperated well, but the teacher was never involved. There was a missing link between teacher and school librarian. The school librarian knew little or nothing about the projects where the students would work actively in the acquisition of new knowledge. The school librarian was not a member of the planning group for projects. There was no guiding or instruction of the students in the school library before or during the project. The students knew they could ask the teachers for guidance, but did so to a very little degree. The teachers did not see the activity in the school library as part of their work. They were not anxious to know what sort of learning took place there. They were not anxious about the process, but the product.

How does this go together with the ten steps in the information-seeking process and the didactic challenges discussed so far? It keeps the process's status as a decontextualized one; a process that has nothing to do with the learning and knowledge in the classroom. Information literacy still seems to be new to both school librarians and to teachers. In my study I mostly observed traditional classroom teaching. When 'project' was on the timetable, the students were to a large extent left to themselves. Teachers and school librarians were complaining about students' attitudes and understanding of different texts, different sources. They were frustrated by the students' use of copying and printing and lack of transforming the information into knowledge. Would all parties benefit from working together, the teachers and school librarians constituting a complementary team of instructors? In some schools all three parties have profitted on doing it this way. The school librarian plays a part in the process from planning to evaluating, thus making goal-directed and procedural instruction possible. The teacher has the overall responsibility for a learning process based on the content of the core curriculum. S/he will also know the students and their capacity best. The school librarian is the professional when it comes to searching and evaluating of texts, both analogue and digital. They can both motivate the students because they both know what is important for the student to know to attain new knowledge.

Conclusion

For students to learn the model's ten steps through the information-seeking process is not enough. Alone the model is like a skeleton - without life. The topics or subjects are the flesh. It is only in the interaction between the two that new knowledge will be attained by the students, and in individual ways. In this complicated interaction both teacher and school librarian must play complementary roles as professional instructors.

References:

Chang-Wells, G. L.M. og Wells, G. (1993): Dynamics of Discourse: Literacy and the Construction of Knowledge. I Forman, Minick, Stone: *Contexts for Learning.* Oxford university press, Oxford.

Core Curriculum for primary, secondary and adult education in Norway (1993): Oslo: The royal ministry of education, research and church affairs.

Eisenberg and Berkowitz (1988): *Curriculum initiative: An agenda and strategy for library media programs.* Norwood, New Jersey: Ablex publishing corporation.

Kuhlthau, C. C. (1993): *Seeking meaning. A process approach to library and information services.* New Jersey: Ablex publishing.

Limberg, L. (1998): *Att söka information för att lära.* Borås: Valfrid. Dissertation

Pitts, J. (1994): *Personal understandings and mental models of information: A qualitative study of factors associated with the information-seeking and use of adolescents.* Florida state university. Ph.D. dissertation.

Rafste, E.T. (2001): *Et sted å lære eller et sted å være. En case studie av elevers bruk og opplevelse av skolebiblioteket.* Oslo: Unipub. Universitetet i Oslo. Dissertation for Ph.D.

Säljö, R. (2001): *Læring i praksis. Et sosiokulturelt perspektiv.* Oslo: Cappelen akademiske forlag.

Stripling, B. and Pitts, J. (1988): *Brainstorms and Blueprints. Teaching library research as a thinking process.* Englewood, Colorado: Libraries unlimited.

BEST COPY AVAILABLE

U.S. Department of Education
Office of Educational Research and Improvement (OERI)
National Library of Education (NLE)
Educational Resources Information Center (ERIC)

NOTICE

Reproduction Basis

X	This document is covered by a signed "Reproduction Release (Blanket)" form (on file within the ERIC system), encompassing all or classes of documents from its source organization and, therefore, does not require a "Specific Document" Release form.
	This document is Federally-funded, or carries its own permission to reproduce, or is otherwise in the public domain and, therefore, may be reproduced by ERIC without a signed Reproduction Release form (either "Specific Document" or "Blanket").